

(12)

(21) 2 463 715

(22) 24.10.2002

(51) Int. Cl.<sup>7</sup>:

**F16H 35/02, F16H 7/00,  
F01L 1/02, F16F 15/10**

(85) 15.04.2004

(86) PCT/CA02/001607

(87) WO03/046413

(30) 60/333,118 US 27.11.2001  
60/369,558 US 04.04.2002

(72)

**GAJEWSKI, WITOLD (CA).**

(71)

**LITENS AUTOMOTIVE,  
730 Rowntree Dairy Road, WOODBRIDGE, O1 (CA).**

(74)

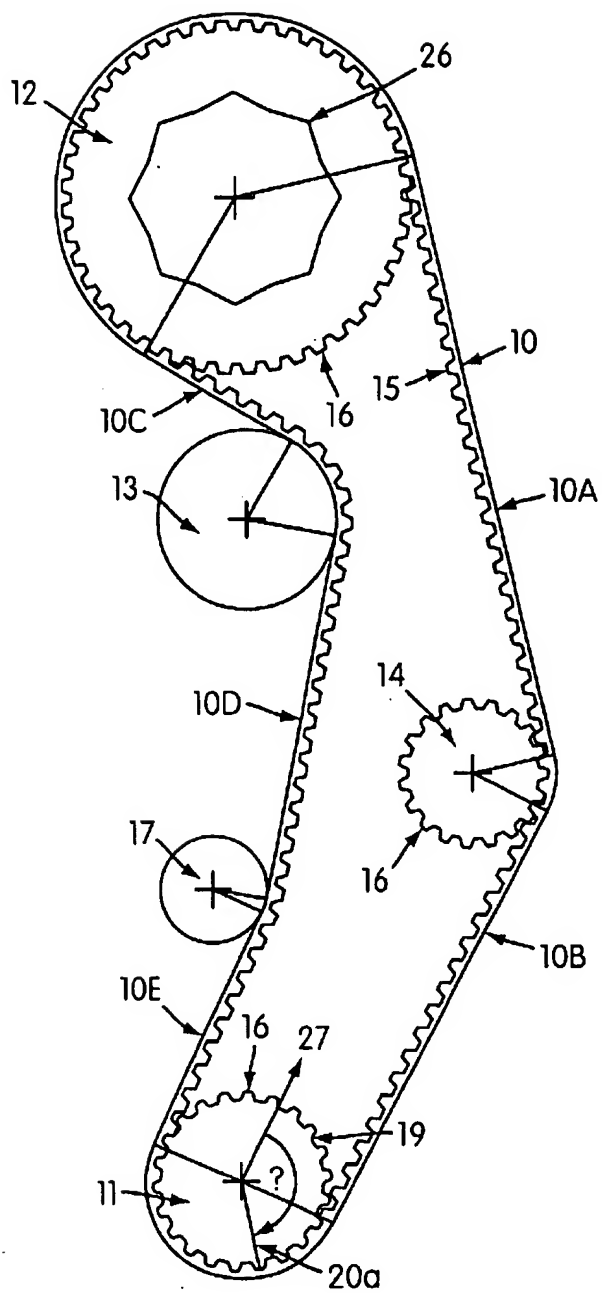
**IMAI, JEFFREY T.**

(54) DISPOSITIF DE COMMANDE SYNCHRONE DOTE D'ELEMENTS DE COMMANDE NON CIRCULAIRES

(54) SYNCHRONOUS DRIVE APPARATUS WITH NON-CIRCULAR DRIVE ELEMENTS

(57)

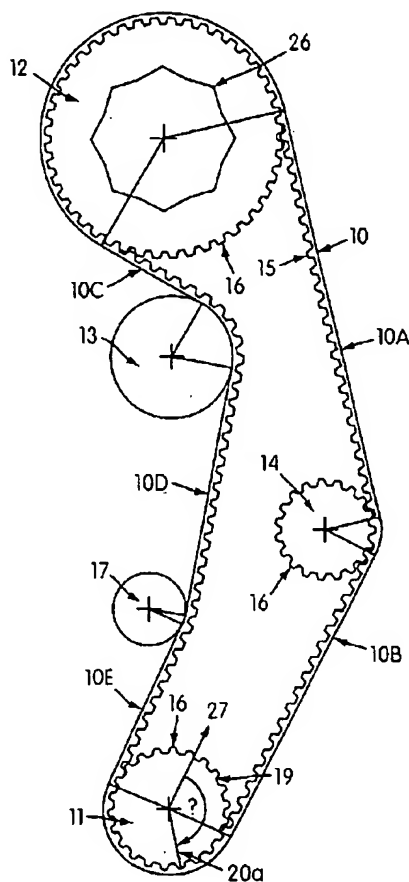
A synchronous drive apparatus and method, wherein the apparatus comprises a plurality of rotors comprising at least a first and a second rotor. The first rotor (11) has a plurality of teeth (16) for engaging the engaging sections (15) of an elongate drive structure (10), and the second rotor (12) has a plurality of teeth (16) for engaging the engaging section of the elongate drive structure. A rotary load assembly (26) is coupled to the second rotor (12). The elongate drive structure (10) engages about the first and second rotors. The first rotor is arranged to drive the elongate drive structure and the second rotor is arranged to be driven by the elongate drive structure. One of the rotors has a non-circular profile (19) having at least two protruding portions alternating with receding portions. The rotary load assembly is such as to present a periodic fluctuating load torque when driven in rotation, in which the angular positions of the protruding and receding portions of the non-circular profile relative to the angular position of the second rotor, and the magnitude of the eccentricity of the non-circular profile, are such that the non-circular profile applies to the second rotor an opposing fluctuating corrective torque which reduces or substantially cancels the fluctuating load torque of the rotary load assembly.



(86) Date de dépôt PCT/PCT Filing Date: 2002/10/24  
(87) Date publication PCT/PCT Publication Date: 2003/06/05  
(85) Entrée phase nationale/National Entry: 2004/04/15  
(86) N° demande PCT/PCT Application No.: CA 2002/001607  
(87) N° publication PCT/PCT Publication No.: 2003/046413  
(30) Priorités/Priorities: 2001/11/27 (60/333,118) US;  
2002/04/04 (60/369,558) US

(51) Cl.Int.<sup>7</sup>/Int.Cl.<sup>7</sup> F16H 35/02, F16F 15/10, F01L 1/02,  
F16H 7/00  
(71) Demandeur/Applicant:  
LITENS AUTOMOTIVE, CA  
(72) Inventeur/Inventor:  
GAJEWSKI, WITOLD, CA  
(74) Agent: IMAI, JEFFREY T.

(54) Titre : DISPOSITIF DE COMMANDE SYNCHRONES DOTE D'ELEMENTS DE COMMANDE NON CIRCULAIRES  
(54) Title: SYNCHRONOUS DRIVE APPARATUS WITH NON-CIRCULAR DRIVE ELEMENTS



(57) Abrégé/Abstract:

A synchronous drive apparatus and method, wherein the apparatus comprises a plurality of rotors comprising at least a first and a second rotor. The first rotor (11) has a plurality of teeth (16) for engaging the engaging sections (15) of an elongate drive

(57) Abrégé(suite)/Abstract(continued):

structure (10), and the second rotor (12) has a plurality of teeth (16) for engaging the engaging section of the elongate drive structure. A rotary load assembly (26) is coupled to the second rotor (12). The elongate drive structure (10) engages about the first and second rotors. The first rotor is arranged to drive the elongate drive structure and the second rotor is arranged to be driven by the elongate drive structure. One of the rotors has a non-circular profile (19) having at least two protruding portions alternating with receding portions. The rotary load assembly is such as to present a periodic fluctuating load torque when driven in rotation, in which the angular positions of the protruding and receding portions of the non-circular profile relative to the angular position of the second rotor, and the magnitude of the eccentricity of the non-circular profile, are such that the non-circular profile applies to the second rotor an opposing fluctuating corrective torque which reduces or substantially cancels the fluctuating load torque of the rotary load assembly.